

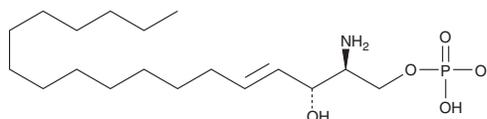
# PRODUCT INFORMATION



## Sphingosine-1-phosphate (d18:1)

Item No. 62570

**CAS Registry No.:** 26993-30-6  
**Formal Name:** 2S-amino-4E-octadecene-1,3R-diol  
1-(dihydrogen phosphate)  
**Synonyms:** S1P (d18:1), Sphingosine-1-Phosphoric Acid  
**MF:** C<sub>18</sub>H<sub>38</sub>NO<sub>5</sub>P  
**FW:** 379.5  
**Purity:** ≥98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Sphingosine-1-phosphate (S1P) (d18:1) is supplied as a crystalline solid. S1P (d18:1) is sparingly soluble in organic solvents. Aqueous solutions can be prepared by directly dissolving the crystalline solid in basic buffers. The solubility of S1P (d18:1) in 0.3 M NaOH is approximately 4 mg/ml, but it will precipitate at pH less than 7.5. The reconstituted material will be stable for 24 hours if stored at 4°C.

### Description

Sphingosine-1-phosphate (S1P) is the product of phosphorylation of sphingosine by sphingosine kinase that is secreted from cells and acts as an agonist at S1P receptors.<sup>1,2</sup> It increases intracellular calcium levels in TAg-Jurkat cells expressing S1P<sub>1</sub> and G<sub>q/15</sub>, which allows for phospholipase C stimulation by G<sub>i</sub> proteins, when used at a concentration of 200 nM, as well as in TAg-Jurkat cells expressing S1P<sub>2</sub> and S1P<sub>3</sub> receptors (EC<sub>50</sub>s = 8 and 11 nM, respectively).<sup>3</sup> Intra- and extracellular levels of S1P vary spatially allowing it to function as an autocrine or paracrine factor, respectively, and dysregulation of S1P levels are associated with various disease states, such as inflammation and autoimmunity.<sup>4</sup> S1P has a wide variety of effects, including an involvement in cell growth, angiogenesis, immunity, and neuroprotection.

### References

1. Sanchez, T. and Hla, T. Structural and functional characteristics of S1P receptors. *J. Cell. Biochem.* **92(5)**, 913-922 (2004).
2. van Koppen, C.J., zu Heringdorf, D.M., Laser, K.T., et al. Activation of a high affinity G<sub>i</sub> protein-coupled plasma membrane receptor by sphingosine-1-phosphate. *J. Biol. Chem.* **271(4)**, 2082-2087 (1996).
3. An, S., Bleu, T., and Zheng, Y. Transduction of intracellular calcium signals through G protein-mediated activation of phospholipase C by recombinant sphingosine 1-phosphate receptors. *Mol. Pharmacol.* **55(5)**, 787-794 (1999).
4. Cartier, A. and Hla, T. Sphingosine 1-phosphate: Lipid signaling in pathology and therapy. *Science* **366(6463)**, (2019).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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